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April 10, 2006

Supervisor
U.S. Fish and Wildlife Service
Marine Mammals Management Office
1011 East Tudor Road
Anchorage, Alaska 99503

RE: Polar Bear 90-Day Petition Finding

Dear Supervisor:

This letter contains the comments of the Attorney General of California regarding the United States Fish and Wildlife Service's 90-Day finding on the pending petition to list the polar bear as "threatened" under the Endangered Species Act (ESA). The Attorney General submits these comments pursuant to his independent authority under the California constitution, common law and statutes, to represent the public interest. These comments are made on behalf of the Attorney General of California, and not on behalf of any other agency, officer or office.

Introduction

The potential listing of the polar bear as an endangered species because of the effects of global warming should set off alarm bells around the world. Global warming is removing the bears' habitat and wreaks havoc in the arctic climates where they live and grow. To spoil the earth for generations to come, and for the creatures that inhabit it, when we knew what we were doing and could have stopped it, would be a moral failing of enormous – and might I add – biblical proportions." *Senator Joseph Lieberman, co-sponsor of the Climate Stewardship Act*

The best available science demonstrates that global warming is a reality, that Arctic sea ice is melting as a result, and that these trends will continue and accelerate.

The impact of climate change on the polar bear, perhaps the most prominent of many vulnerable climate-dependent species, is the leading edge indicator of the growing threats posed by climate change to many of California's native species, California's sensitive coastline and major river deltas, California's coastal cities and ports, California's water supply and agricultural industry, among other things. The most recent studies of ocean warming trends predict a near-total loss of the Arctic sea-ice habitat that sustains the polar bear, causing a sea-level rise that

would threaten to inundate coastal cities, ports, harbors and river deltas worldwide. The polar bear is the “canary in the coal mine” for the future of coastal and water-dependent economies such as California, demonstrating the urgency with which the federal government should evaluate and address the impact of climate change on the polar bear now. The California Attorney General’s interest is to ensure that the Fish and Wildlife Service and the Secretary of Interior consider the impact of climate change on the polar bear at the earliest possible point, and act upon those impacts before the loss of polar bear habitat is too severe to mitigate. In doing so, the USFWS will focus federal government attention on climate change impacts on the polar bear, which also impact California and its habitat and species.

We are not suggesting by these comments that the California Attorney General has particular expertise in the evaluation of polar bear habitat and survival. Rather, we encourage the USFWS to fully consider the overwhelming evidence of human-induced climate change, and of the determination by the world’s scientists that substantially greater impacts on polar bear habitat in the Arctic, as a leading indicator or impacts on California and the rest of the planet, are certain to occur over the next decades.

I. The Polar Bear Meets the Criteria For Listing as “Threatened” Under the ESA

The pending petition asks the Fish and Wildlife Service to determine, based upon the best available science, that the polar bear currently meets the definition of a “threatened” species under the ESA, and to recommend to the Secretary of the Interior that the species be listed as such. A species is “threatened” under the ESA if it “is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.” 16 U.S.C. 1532(20).¹ “Endangered” is defined as, “in danger of extinction throughout all of a significant portion of its range.” 16 U.S.C. § 1531(6). The Secretary is required to list a species under the Act if its present condition meets either of these definitions, using five statutory listing factors:

- (A) the present or threatened destruction, modification, or curtailment of its habitat or range;
- (B) overutilization for commercial, recreational, scientific, or educational purposes;
- (C) disease or predation;
- (D) the inadequacy of existing regulatory mechanisms
- (E) other natural or manmade factors affecting its continued existence.

16 U.S.C. § 1533(a)(1)(A)-(E); 50 C.F.R. § 424.11(c)(1)-(5).

¹ Although the statutory term “foreseeable future” is not defined, the Attorney General suggests that at the very least, “foreseeable future” refers to scenarios or events that can be foreseen using the best available science.

The Secretary must designate critical habitat for the polar bear concurrently with its listing determination. 16 U.S.C. § 1533(a)(3)(A). The designation and protection of critical habitat is one of the primary ways in which the fundamental purpose of the ESA – to provide for the conservation and recovery of endangered and threatened species -- is achieved. Critical habitat designation affords listed species additional protections under Section 7 of the ESA. 16 U.S.C. § 1536(a)(2). Section 7 consultation requirements provide that no action authorized, funded, or carried out by any federal agency will “jeopardize the continued existence of any endangered species or threatened species *or result in the destruction or adverse modification of [critical habitat]*.” 16 U.S.C. § 1536(a)(2) (emphasis added).

A. The Scientific Consensus on Global Warming

That global warming as a result of anthropogenic greenhouse gas emissions is occurring, and will continue to occur, is no longer subject to credible scientific dispute. Two recent publications purport to synthesize the best available science on the present state of climate change. The Arctic Climate Impact Assessment (ACIA) published a comprehensively researched, fully referenced, and independently reviewed evaluation of Arctic climate change and its impacts, reflecting the efforts of hundreds of scientists over four years, as well as the special knowledge of indigenous peoples.² The ACIA’s 2004 report shows that the Arctic has warmed and is projected to warm more rapidly than any other region on Earth, that the extent of sea ice has decreased by nearly one million square kilometers over the past 30 years, and that this melting trend is accelerating. The Intergovernmental Panel on Climate Change (IPCC) was created in 1988 by the World Meteorological Organization and the United Nations Environmental Programme to evaluate the state of climate science as a basis for informed policy action on the basis of peer-reviewed and published scientific literature.³ According to the IPCC’s *Climate Change 2001: The Scientific Basis*, a comprehensive reference on the state of current knowledge regarding climate change, there is an international scientific consensus that greenhouse gas emissions are causing and will continue to cause global warming. The 2001 IPCC report shows that atmospheric concentration of carbon dioxide has increased by 31% since 1750, that the present concentration has not been exceeded during at least the past 420,000 years, and that the current rate of increase is unprecedented during at least the past 20 million years.⁴

² See ACIA, 2004. *Impacts of a Warming Climate: Arctic Climate Impact Assessment*. Cambridge Univ. Press, Cambridge, United Kingdom and New York, NY USA. Available at <http://amap.no/acia/>. (Hereinafter, “ACIA 2004a.”)

³ See www.ipcc.ch/about/about.htm.

⁴ See IPCC 2001. *Climate Change 2001: The Scientific Basis. Contribution of Working Group I to the Third Assessment Report of the Intergovernmental Panel on Climate Change* [Houghton, J. T., et al. (eds.)]. Cambridge Univ. Press, Cambridge, United Kingdom and New York, NY USA, 881 pp. Available at <http://www.ipcc.ch/>.

In 2001, the National Academy of Sciences analyzed the key findings of the IPCC at the request of the White House, and observed: “The IPCC’s conclusion that most of the observed warming of the last 50 years is likely to have been due to the increase in greenhouse gas concentrations accurately reflects current thinking of the scientific community on this issue,” and concluded that “[d]espite uncertainties, there is general agreement that the observed warming is real and particularly strong within the past 20 years.” National Research Council of the National Academies, *Climate Change Science: An Analysis of Some Key Questions* [National Academy Press, Wash. DC (2001)].

In 2002, the U.S. EPA coordinated the involvement of a dozen federal agencies and the Executive Office of the President in preparation of the *U.S. Climate Action Report 2002*, submitted to the Secretariat of the United Nations Framework Convention on Climate Change (“UNFCCC”). The *Climate Action Report* concludes that the dominant source of human-caused climate change is CO₂ emissions, and that “the long lifetimes of greenhouse gases [such as CO₂] in the atmosphere and the momentum of the climate system are projected to cause climate to continue to change for more than a century.” *Climate Action Report* at 82. Leading NASA and U.S. Department of Energy scientists stated that emissions of carbon dioxide and other heat-trapping gases have warmed the oceans and led to an energy imbalance that is causing, and will continue to cause, significant warming, increasing the urgency of reducing CO₂ emissions. J. Hansen, *et al*, *Earth’s Energy Imbalance: Confirmation and Implications*, Scienceexpress, April 28, 2004 (available at <http://pubs.giss.nasa.gov/abstracts/2005/HansenNazarenkoR.html>).

In a joint statement issued in June 2005, the National Academy of Sciences, along with the National Scientific Academies of Brazil, Canada, China, France, Germany, India, Italy, Japan, Russia, and the United Kingdom, concluded that

there is now strong evidence that significant global warming is occurring. The evidence comes from direct measurements of rising surface air temperatures and subsurface ocean temperatures and from phenomena such as increases in average global sea levels, retreating glaciers, and changes to many physical and biological systems. It is likely that most of the warming in recent decades can be attributed to human activities. This warming has already led to changes in the Earth’s climate.

Joint Science Academies’ Statements: Global Response to Climate Change (attached hereto as Ex. A).

Two new studies conducted by teams of government and university scientists and published in the Journal *Science* in March, 2006, show that polar melting is substantial and accelerating. These studies conclude that within 100 years the growing human influence on Earth’s climate could lead to a long and irreversible rise in sea levels, as the planet’s vast polar ice sheets erode and melt away. (311 *Science* 5768, Mar. 24, 2006.) Dr. H. Jay Zwally, a NASA scientist involved in one of the studies, said in an interview with the New York Times: “During

the last 10 years, we have seen only about 10 percent of the greenhouse warming expected during the next 100 years, but already the polar ice sheets are responding in ways we didn't even know about only a few years ago." (Andrew C. Revkin, *Climate Data Hint at Irreversible Rise in Seas*, The New York Times, 3/24/06.) Over several centuries, the studies say, sea levels could rise by as much as 20 feet, submerging major cities worldwide. "The window for action is relatively short," says Dr. Jonathan Overpeck, a University of Arizona scientist who led one of the studies. (Peter N. Spotts, *Little Time to Avoid Big Thaw, Scientists Warn*, The Christian Science Monitor, 3/24/06.) The challenge, he and other researchers say, is to act quickly to reduce emissions of greenhouse gases substantially. (*Id.*)

An essay in the December 3, 2004 edition of *Science* examined 928 peer-reviewed scientific papers concerning climate change published between 1993 and 2003, and concluded that there is remarkable scientific consensus on anthropogenic climate change:

Many details about climate interactions are not well understood, and there are ample grounds for continued research to provide a better basis for understanding climate dynamics. The question of what to do about climate change is also still open. But there is a scientific consensus on the reality of anthropogenic climate change. Climate scientists have repeatedly tried to make this clear. It is time for the rest of us to listen.

Naomi Oreskes, *The Scientific Consensus on Climate Change*, 306 *Science* 1686, Dec. 3, 2004. (The full list of articles reviewed is attached hereto as Ex. B).

In short, global warming is a real and significant problem with serious ramifications for the polar bear now, and for other climate-dependant species, coastal environments and coastal economies in the foreseeable future.

B. Global Warming is Projected to Continue and Accelerate

There is no credible scientific dispute that global warming will continue and accelerate, if greenhouse gas emissions are not substantially reduced. Despite some variation in climate modeling and some remaining uncertainty regarding climate sensitivity, all climate models predict significant warming in this century, with variation only as to the rate and magnitude of the projected warming and its effects (ACIA 2004a). Even using the lowest emissions scenario and the model that generates the least warming in response to atmospheric greenhouse gas composition leads to a projection of warming in this century more than double that experienced in the last century. (*Id.*) All models project that the world will warm significantly as a result of human activities, and that the Arctic is likely to experience this warming particularly early and intensely (ACIA 2004a; Figure 6).

Due to the slow process of climate change, human activities already have committed the world to the continued effect of global warming for centuries to come. Carbon dioxide is a

persistent gas that, once released into the atmosphere, is difficult to recover yet slow to deliver its impact. Every release of CO₂ leads incrementally to more warming, yet it takes many years for that warming effect to manifest itself as rising ocean temperatures and melting ice sheets.⁵ Most climate models show that even once greenhouse gas emissions are stabilized or reduced, global warming will continue for a century or more, and sea levels will continue to rise for many centuries.⁶ According to James Hansen, head of NASA's Goddard Institute, "following the path of business-as-usual for the remainder of this century will lead to an earth so warm as to be 'practically a different planet.'" (The New Yorker, *Comment Chilling*, 3/20/06, at pp. 68.)

C. Existing Regulatory Mechanisms Are Inadequate to Protect Polar Bears From Global Warming

Because carbon dioxide emissions have a direct adverse impact on the polar bear and its habitat, and the United States is currently responsible for approximately one-quarter of all carbon dioxide emissions worldwide,⁷ domestic regulation of such emissions is essential to protection of the polar bear. Despite growing awareness of the danger and potential irreversibility of greenhouse gas effects, there is no regulation of greenhouse gas emissions at the national level.

The primary international mechanisms addressing global warming are the United Nations Framework Convention on Climate Change and the Kyoto Protocol. The UNFCCC was adopted in May 1992, and President George H.W. Bush signed it and the Senate ratified it later that year. The objective of the UNFCCC is stabilization of greenhouse gas concentrations in the atmosphere at a level that would "prevent dangerous anthropogenic interference with the climate system." (EIA 2004). Although the UNFCCC requires each party to "adopt national policies and take corresponding measures on the mitigation of climate change, by limiting its anthropogenic emissions of greenhouse gases and protecting and enhancing its greenhouse gas sinks and reservoirs." UNFCCC, Art. 4.2(a), it contains no enforceable emissions level targets. In reality, the UNFCCC has not been effective in controlling greenhouse gas emissions. More than 10 years after the UNFCCC came into force, greenhouse gas emissions continue to rise worldwide and there is a growing body of evidence that such emissions have reached a point of causing dangerous and irreversible damage to the climate system.

⁵ See IPCC 2001. *Climate Change 2001: Synthesis Report (Summary For Policymakers)* Cambridge Univ. Press, Cambridge, United Kingdom and New York, NY USA, 34 pp. Available at <http://www.ipcc.ch/>.

⁶ See *id.*

⁷ See Energy Information Administration 2004. *International Energy Outlook 2004*. Energy Information Administration, U.S. Department of Energy, Washington, D.C. 244 pp. Available at <http://www.eia.doe.gov/oiaf/ieo/index.html>. (Hereinafter, "EIA 2004".)

The Kyoto Protocol entered into force in February of 2005, after its ratification by Russia, yet the United States has so far refused to ratify it. Although the Protocol sets emissions targets, those reductions are small and unlikely to protect the polar bear. Furthermore, they are very unlikely to be met without the participation of the United States, which is responsible for 24% of worldwide carbon dioxide emissions. The Kyoto target for the United States was a 7% reduction in greenhouse gas emissions levels from 1990 levels by 2012, but between 1990 and 2001 U.S. emissions actually increased by 13%. (EIA 2004.) The General Accounting Office (GAO) projects that total U.S. greenhouse gas emissions will grow a staggering 43% by 2025. (GAO, *Climate Change: Trends in Greenhouse Gas Emissions and Emissions Intensity in the United States and Other High-Emitting Nations*. GAO 04-146R, Oct. 28, 2003, General Accounting Office, Wash., D.C. 8 pp. Available at <http://www.gao.gov/docsearch/repandtest.html>.)

Conclusion

In sum, Earth's climate is warming due to anthropogenic greenhouse gas emissions, and this warming will continue and accelerate, with severe implications for the polar bear and for sensitive and coastal environments and people worldwide, including California, unless major reductions in emissions are implemented very rapidly at the federal level by the United States. Existing regulatory mechanisms are wholly inadequate to bring this accelerating and alarming phenomenon under control so as to insure the continued survival of the polar bear, implicating at least two of the five statutory listing factors under the ESA (subsections (A) and (D)). 16 U.S.C. § 1533(a)(1)(A),(D). The scientific consensus on global warming supports the listing of the polar bear, and the listing should focus federal attention on the pressing issues of climate change that threaten, ultimately, California's environment, natural resources and economy.

Sincerely,

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Deputy Attorney General
KEN ALEX
Supervising Deputy Attorney General

For BILL LOCKYER
Attorney General of California